

CHAPTER 3C. OBJECT MARKERS

Section 3C.01 Object Marker Design and Placement Height

Support:

Object markers are used to mark obstructions within or adjacent to the roadway.

Standard:

When used, object markers (see Figure 3C-1) shall consist of an arrangement of one or more of the following types:

Type1— either a marker consisting of nine yellow retroreflectors, each with a minimum diameter of 75 mm (3 in), mounted symmetrically on a yellow (OM1-1) or black (OM1-2) diamond panel 450 mm (18 in) or more on a side; or on an all-yellow retroreflective diamond panel (OM1-3) 450 mm (18 in) or more on a side.

Type2—either a marker (OM2-1V or OM2-1H) consisting of three yellow retroreflectors, each with a minimum diameter of 75 mm (3 in), arranged either horizontally or vertically on a white panel measuring at least 150 x 300 mm (6 x 12 in); or on an all-yellow horizontal or vertical retroreflective panel (OM2-2V or OM2-2H), measuring at least 150 x 300 mm (6 x 12 in).

Type3—a striped marker, 300 x 900 mm (12 x 36 in), consisting of a vertical rectangle with alternating black and retroreflective yellow stripes sloping downward at an angle of 45 degrees toward the side of the obstruction on which traffic is to pass. The minimum width of the yellow and black stripes shall be 75 mm (3 in). A striped marker 600 x 1200 mm (24 x 48 in) shall be used for all bridge abutments.

Support:

A better appearance can be achieved if the black stripes are wider than the yellow stripes.

Type 3 object markers with stripes that begin at the upper right side and slope downward to the lower left side are designated as right object markers (OM-3R). Object markers with stripes that begin at the upper left side and slope downward to the lower right side are designated as left object markers (OM-3L).

Guidance:

When used for marking objects in the roadway or objects that are 3.6 m (12 ft) or less from the shoulder or curb, the mounting height to the bottom of the object marker should be at least 1.2 m (4 ft) above the surface of the nearest traffic lane.

When used to mark objects more than 3.6 m (12 ft) from the shoulder or curb, the mounting height to the bottom of the object marker should be at least 2.1 m (7 ft) above the ground.

Option:

When object markers or markings are applied to an object that by its nature requires a lower or higher mounting, the vertical mounting height may vary according to need.

Section 3C.02 Markings for Objects in the Roadway

Standard:

Obstructions within the roadway shall be marked with a Type 1 or Type 3 object marker. In addition to markers on the face of the obstruction, warning of approach to the obstruction shall be given by appropriate pavement markings (see Section 3B.10).

Standard:

The alternating black and retroreflective yellow stripes (OM-3L, OM-3R) shall be sloped down at an angle of 45 degrees toward the side on which traffic is to pass the obstruction. If traffic can pass to either side of the obstruction, the alternating black and retroreflective yellow stripes (OM-3C) shall form chevrons that point upwards.

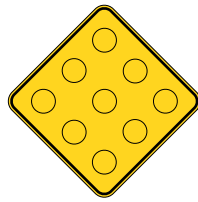
Option:

Appropriate signs (see Sections 2B.33 and 2C.20) directing traffic to one or both sides of the obstruction may be used instead of the object marker.

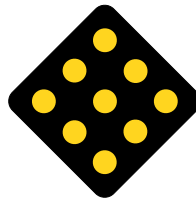
Section 3C.03 Markings for Objects Adjacent to the Roadway

Support:

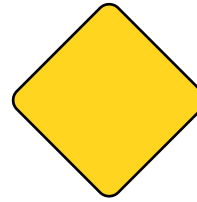
Objects not actually in the roadway are sometimes so close to the edge of the road that they need a marker. These include underpass piers, bridge abutments, handrails, and culvert headwalls. In other cases there might not be a physical object involved, but other roadside conditions exist, such as narrow shoulders, drop-offs, gores, small islands, and abrupt changes in the roadway alignment, that might make it undesirable for a road user to leave the roadway, and therefore would create a need for a marker.

Figure 3C-1. Object Markers and End-of-Roadway Markers**Type 1 Object Markers**

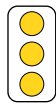
OM1-1



OM1-2



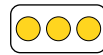
OM1-3

Type 2 Object Markers

OM2-1V



OM2-2V



OM2-1H



OM2-2H

Type 3 Object Markers

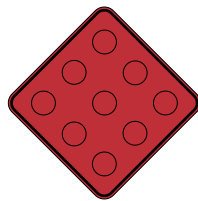
OM-3L



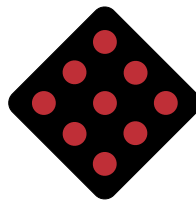
OM-3C



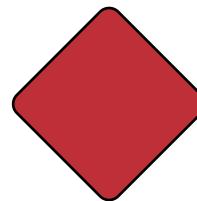
OM-3R

End-of-Roadway Markers

OM4-1



OM4-2



OM4-3

Option:

Type 2 or Type 3 object markers may be used at locations such as those described in the preceding Support paragraph.

Standard:

If used, the inside edge of the marker shall be in line with the inner edge of the obstruction.

Guidance:

Standard warning signs (see Chapter 2C) should also be used where applicable.

Standard:

Bridge End Marker (OM-3) shall be placed at:

1. All bridges and overpasses
 - 2-way Roadway - 4 BEM's for bridges length > 6.1 m (20 ft).
 - 2-way Roadway - 2 double BEM's (back to back) bridges length < = 6.1 m (20ft).
2. Walls with a height \geq 200 mm (8 in) that are:
 - within 3.7 m (12 ft) of edge of roadway not protected by guardrail.
 - within 0.6 m (2 ft) of edge of roadway even if protected by guardrail.
 - above 3.7 m (12 ft) but 3.7 m (12 ft) of edge from roadway protected by guardrail but 0.6 m (2 ft) or more closer to the edge of roadway than other obstructions - trees, light poles, etc.
3. Jersey barriers along expressway medians or outside shoulder at points where the shoulder is less than 2.5m (8 ft), or more than 0.6 m (2 ft) narrower than that along the approach to the narrowing.

Guidance:

Bridge End Marker (OM-3) should be installed at 1.2 m (4 ft) above the pavement travel lane and as closely in line with the face after parapet or wall as possible and

Standard:

Bridge Abutment Marker OM-3(1) shall be installed at:

1. piers and abutments within 3.7 m (12 ft) of the edge of roadway with or without guardrail.
2. sloping abutments within 3.7 m (12 ft) of the edge of roadway with or without guardrail.
3. piers and abutments within 9.1 m (30 ft) of the edge of roadway without guardrail.
4. wherever engineering study indicates a need.

Guidance:

Figures 3C-2 should be conformed to for the Bridge End Markers placement.

Support:

Bridge End Markers (OM-3) can serve as indications to the traveling public of the possibility of black ice on the bridge surface.

Section 3C.04 End-of-Roadway Markers

Support:

The end-of-roadway marker is used to warn and alert road users of the end of a roadway in other than construction or maintenance areas.

Standard:

The end-of-roadway marker (see Figure 3C-1) shall be one of the following: a marker consisting of nine red retroreflectors, each with a minimum diameter of 75 mm (3 in), mounted symmetrically on a red (OM4-1) or black (OM4-2) diamond panel 450 mm (18 in) or more on a side; or a retroreflective red diamond panel (OM4-3) 450 mm (18 in) or more on a side.

Option:

The end-of-roadway marker may be used in instances where there are no alternate vehicular paths.

Where conditions warrant, more than one marker, or a larger marker with or without a Type III barricade (see Section 3F.01), may be used at the end of the roadway.

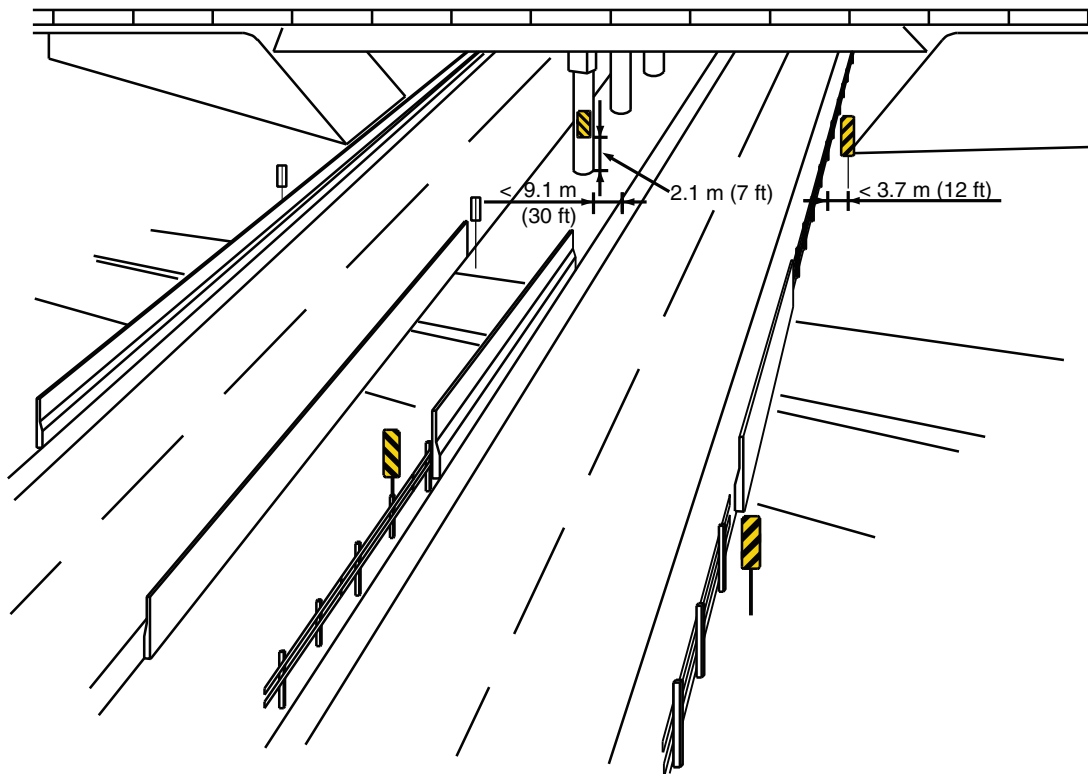
Standard:

The minimum mounting height to the bottom of an end-of-roadway marker shall be 1.2 m (4 ft) above the edge of the pavement.

Guidance:

Appropriate advance warning signs (see Chapter 2C) should be used.

Figure 3C-2. Examples of OM-3 Bridge End Markers and Bridge Abutment Markers Guideline



Bridge End Markers shall be used at expressway median points where barrier tapers to either narrow the paved shoulder to a width of less than 2.5 m (8 ft), or narrow the paved shoulder by 0.6 m (2 ft) or more from the approach shoulder width.

Bridge Abutment Markers shall be used at all piers and abutments within 3.7 m (12 ft) of the edge of travel lane regardless of traffic barrier protection.

Bridge Abutment Markers shall be used at all piers and abutments within 9.1 m (30 ft) which are not protected by traffic barrier.

Bridge Abutment Markers are not required where the abutment is 1.9 m (4 ft) or greater behind concrete barrier.

Mounting height should be 1.2 m (4 ft) within 3.7 m (12 ft) of the roadway and 2.1 m (7 ft) further out.

Bridge Abutment Markers (OM-3 or OM-3(1)) should be mounted with their edge nearest the roadway aligned with the front of the parapet wall it delineates.

All bridge ends/abutments within 9.1 m (30 ft) of the centerline (both sides) along undivided roadways shall be marked.